The microcomputer 40 is in charge of overall controls with respect to diverse cooking functions which are provided. The microcomputer 40 switches on the secondary interlock switch SSW by driving the switching transistor 41 if an input signal for executing a certain cooking function is inputted through a operation panel by a user in the state that the door is closed.

Accordingly, if the primary interlock switch PSW and the secondary interlock switch SSW are respectively switched on, a DC voltage of 15V from the voltage regulator 30 is applied to the voltage terminal Vcc of the pulse driving unit VFC1.

A first relay switch RY1 is switched on when the door sensing switch DSW is switched off according to the open state of the door. Accordingly, a door lamp L is lit with the supply of the DC voltage from the DC power supply DC if the first relay switch RY1 is turned.

A second relay switch RY2 is switched on in association with an input of a cooking start selection signal from the operation panel by a user in the state that the door sensing switch DSW is turned on. Accordingly, a fan motor F for cooling the magnetron MGT is rotated by the DC power voltage in the state that the second relay switch RY2 is turned on.

The first and second relay switches RY1 and RY2 is preferably controlled by the microcomputer.

Hereinafter, the operations of the driving circuit of a microwave oven is described in detail.

First of all, in the cooking chamber door is opened, the door sensing switch DSW and the primary interlock switch PSW are turned off. Therefore, a voltage supply of the pulse

driving unit VFC1 from the voltage regulator 30 is cut off, and the first and second field effect transistors FET1 and FET2 are turned off, so that the voltage supply to the magnetron MGT is not achieved.

In the meantime, if the cooking chamber door is closed, the door sensing switch DSW and the primary interlock switch PSW are turned on in correspondence with the closed state of the cooking chamber door.

If a cooking start selection button is pressed from the operation panel according to the manipulation of a user in the state that the door is closed, the microcomputer 40 turns the switching transistor 41 on. Therefore, the secondary interlock switch SSW is turned on by an electromagnetic force generated by the conduction of current of the exciting coil ICO.

If the primary interlock switch PSW and the secondary interlock switch SSW are all turned on, the pulse driving unit VFC1 is operated by a voltage supplied from the voltage regulator 30, and generates first and second pulse signal with alternate pulse-generating periods through first and second pulse output terminals OUT1 and OUT2.

In the meantime, the first and second field effect transistors FET1 and FET2 are alternately turned on and off by the first and second pulse signals generated from the pulse driving unit VFC1. According to the alternate turning on and off of the first and second field effect transistors FET1 and FET2, an AC voltage is applied to the primary coil T1 of the high voltage transformer HVT, and a high voltage is induced in the secondary coil T2.

Accordingly, the magnetron MGT is driven by the voltage induced in the secondary coil of the high voltage transformer HVT and increased by the high voltage capacitor HVC and the high voltage diode HVD to generate a microwave.

In the meantime, in case that a short-circuited state is maintained even though the cooking chamber door is opened with an malfunction of the primary interlock switch PSW and the secondary interlock switch SSW, the fuse FUSE1 is opened by the first and second monitor switches MSW1 and MSW2 which are turned on according to the opening of the cooking chamber door. If the fuse FUSE1 is opened, a voltage supply of the high voltage transformer HVT from the DC power supply DC is cut off, so that the driving of the magnetron MGT is stopped.

Next, with reference to FIG. 2, the driving circuit of a DC microwave oven according to the second embodiment will be described.

The components having the same functions as those in the previous drawing will be indicated as the same reference numerals, and not be described in detail.

Referring to FIG. 2, the driving circuit of a microwave oven includes first and second transistors 50 and 51, an operational amplifier 52, a third transistor 53, a diode D1, and a pulse driving unit VFC2.

A reference numeral 54 indicates a comparator built in the pulse driving unit VFC2.

An excessive current detecting unit includes an excessive current detecting part and a comparison part.

The excessive current detecting part detects a current supplied through the first and second field effect transistors FET1 and FET2 as an inverting unit.

The base electrodes of the first and second transistors 50 and 51 as the excessive current detecting part are connected to the first and second pulse output terminals OUT1 and OUT2 of the pulse driving circuit VFC2 respectively. Further, the collector electrodes of the